



UNIVERSIDAD DE ALMERÍA



Mardi 15 novembre 2016, 11:00

Salle de réunion

PHYSICAL BARRIERS VS PEST

par

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- 📌 Different species of aphids, whiteflies and thrips cause huge economic losses in crops around the world. They not only produce direct damage by feeding and laying eggs but they also transmit phytopathogenic organisms. Indeed, in certain cases, this is of much more concern for growers than the direct damage they cause.
- 📌 The use of insect-proof screens as a method of control is widespread. These agrotextiles act as physical barriers preventing the contact between insects and plants. Their effectiveness as a method of crop protection has been sufficiently demonstrated. The use of insect-proof screens reduces pest populations, decreases the incidence of insect-transmitted diseases and as a result it reduces the need to apply pesticides. There is a wide variety of screens with different properties on the market. Some of these agrotextiles are known commercially like anti-aphids or anti-thrips screens although their efficacy is not proven. During the last decades different studies have evaluated the efficacy of insect exclusion screens both under laboratory and in field conditions against various pests. The results of these works offer constant values that represent the relationship between insects and fabrics.
- 📌 However, that relationship is not a constant and depends on other variables in addition to the properties of the textile and the characteristics of the insect. The velocity and air temperature also influence the relationship between screen and insect and modify the exclusion capacity of the protection screens. To take into account these variables, we have built a device to evaluate the effectiveness of the screens under laboratory conditions. With this device we can measure the capacity of exclusion of the screens at different air velocities and we can interpret the data according to the measured temperature values. The results show that the efficacy of the screens varies when the conditions change and, in general, the exclusion percentage of the screens decreases when air velocity increases. The temperature is also an influential variable on the efficacy of these textiles and it has been observed that if the temperature decreases the effectiveness of the screens increases due to the lower activity of insects.